In the Claims:

Please amend the claims as follows:

1. (Currently Amended) A method for treating material, said method comprising the steps of:

heating and pressurizing the material to a temperature between approximately 705°F and approximately 1500°F and a pressure of between approximately 20 atmospheres and approximately 200 atmospheres in a first chamber;

retaining said material in said first chamber at said temperature, ~~and~~ said pressure and in an atmosphere that is overall net reducing to volatilize a portion of said material;

transferring said volatilized portion to a second chamber;

adding oxidant to said second chamber; and

oxidizing said volatilized portion in said second chamber at a temperature between approximately 1000°F and approximately 1800°F and a pressure of between approximately 20 atmospheres and approximately 200 atmospheres.

2. (Original) The method as recited in claim 1 wherein the step of heating and pressurizing the material in a first chamber comprises injecting steam into said first chamber.

3. (Cancelled)

4. (Original) The method as recited in claim 1 further comprising the step of injecting steam into said second chamber.

5. (Original) The method as recited in claim 1 wherein said oxidizing step produces a process effluent containing carbon dioxide and said method further comprises the step of separating a portion of said carbon dioxide from said process effluent.

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6. (Original) The method as recited in claim 5 further comprising the step of liquefying said separated carbon dioxide.

7. (Original) The method as recited in claim 1 further comprising the step of using an auger in said first chamber to mix and transport the material within said first chamber during said retaining step.

8. (Original) The method as recited in claim 1 wherein said first chamber and said second chamber are located within separate pressure vessels.

9. (Original) The method as recited in claim 1 wherein said first chamber and said second chamber are located within a single pressure vessel.

10. (Currently Amended) A method for treating a material, said process comprising the steps of:

heating said material to a temperature between approximately 705°F and 1500°F without the addition of a substantial amount of oxidizer to volatilize at least a portion of the material to separate the material into a volatile portion and a residue portion;

disposing said volatile portion in a chamber; and

hydrothermally treating said volatile portion to chemically convert at least a fraction of said volatile portion.

11. (Cancelled)

12. (Currently Amended) The method as recited in claim ~~11~~ 10 wherein said material is pressurized to a pressure of between approximately 20 atmospheres and approximately 200 atmospheres during said heating step.

13. (Original) The method as recited in claim 10 wherein said chamber is a second chamber, said heating step is conducted in a first chamber, and said hydrothermal treating step is performed in said second chamber.

14. (Original) The method as recited in claim 13 wherein said first chamber and said second chamber are located within separate pressure vessels.

15. (Original) The method as recited in claim 13 wherein said first chamber and said second chamber are located within a single pressure vessel.

16. (Original) The method as recited in claim 10 wherein said hydrothermal treating step includes the step of reacting said volatile portion with an oxidant.

17. (Original) The method as recited in claim 10 wherein said hydrothermal treating step comprises the step of holding said volatile portion at a temperature between approximately 1000°F and approximately 1800°F and a pressure of between approximately 20 atmospheres and approximately 200 atmospheres.

Claims 18 - 32 (Cancelled)

33. (New) A method for treating a solid contaminated with a volatile material, said method comprising the steps of:

disposing the contaminated solid in a first chamber at a substantially ambient pressure and thereafter;

heating and pressurizing the contaminated solid to a temperature between approximately 705°F and approximately 1500°F and a pressure of between approximately 20 atmospheres and approximately 200 atmospheres in the first chamber;

retaining said contaminated solid in said first chamber at said temperature and said pressure to volatilize at least a portion of said volatile material;

transferring said volatilized portion to a second chamber;

adding oxidant to said second chamber; and

oxidizing said volatilized portion in said second chamber at a temperature between approximately 1000°F and approximately 1800°F and a pressure of between approximately 20 atmospheres and approximately 200 atmospheres.

34. (New) The method as recited in claim 33 wherein the step of heating and pressurizing the material in a first chamber comprises injecting steam into said first chamber.

35. (New) The method as recited in claim 33 further comprising the step of injecting an oxidant into said first chamber.

36. (New) The method as recited in claim 33 further comprising the step of injecting steam into said second chamber.

37. (New) The method as recited in claim 33 wherein said oxidizing step produces a process effluent containing carbon dioxide and said method further comprises the step of separating a portion of said carbon dioxide from said process effluent.

38. (New) The method as recited in claim 37 further comprising the step of liquefying said separated carbon dioxide.

39. (New) The method as recited in claim 33 further comprising the step of using an auger in said first chamber to mix and transport the material within said first chamber during said retaining step.

40. (New) The method as recited in claim 33 wherein said first chamber and said second chamber are located within separate pressure vessels.